Stephen Reid Consulting
Traffic and Transportation

Proposed Warehouse Development

Site R, Jordanstown Road, Aerodrome Business Park, Greenogue, Rathcoole, Co Dublin
Traffic Impact Assessment

Client: Exeter Ireland Property IV C Limited

MAY 2021

Contents

Appendices

Rev	Date	Purpose of Issue	Approved
0	20.05.2021	Draft	SR
1	24.05.2021	Final Draft	SR

Prepared by:

Stephen Reid Consulting Traffic and Transportation Limited
Estuary House, New Street, Malahide, Co Dublin K36 KH32
+353(0)87 979 3479
stephenreid@stephenreidconsulting.com
www.stephenreidconsulting.com

1 INTRODUCTION

1.1 BACKGROUND

Stephen Reid Consulting Traffic and Transportation Limited (SRC) have prepared this report on behalf of Exeter Ireland Property IV C Limited in support of a planning application to be submitted to South Dublin County Council (SDCC) for development of a commercial warehouse building on lands extending to 5.67Ha on the southeastern side of the Aerodrome Business Park (known as Site R) at Greenogue, Rathcoole, Co Dublin.

The application will comprise of the construction of a single warehouse building (overall GFA of 22,966 sq. m) with ancillary office and staff facilities, with the following floor areas and key elements:

- warehouse area (21,113 sq. m)
- ancillary office areas on three floors (1,163 sq. m)
- staff facilities on three floors (690 sq. m)
- serviced by a total of 30 loading docks
- 210 staff/visitor car parking spaces and 36 staff cycle parking spaces.
- New access roadway including verges and footpaths connecting to east side of Jordanstown Road with the Business Park
- Two new vehicle access points to the existing Site E on the north side of the new access roadway
- Associated site development works including lighting, services, car parking and circulation roadways, internal footpaths, boundary treatments and landscaping.

The application site location is indicated in Figure 1.1.

1.2 METHODOLOGY

On the basis of recent project work in the Greenogue area which was informed by a number of discussions with SDCC Planning & Transportation Department, and with recognition of the predominant commuter traffic movements to/from the N7 Junction 4 to the south east, SRC have determined the scope of the Traffic Impact Assessment, based on weekday traffic counts at the following junctions on the R120 Newcastle Road:

- 1. Greenogue Roundabout;
- 2. Aerodrome Roundabout;
- 3. Advanced Waste Recycling Access;
- 4. N7 eastbound slips/R120 Roundabout (Junction 4, north of Bridge);
- 5. R120/Rathcoole Village/Fitzmaurice Road Roundabout (south of Bridge);
- 6. N7 westbound slips/R120 Fitzmaurice Road/Mill Road Roundabout (Junction 4, south east).

From these counts, SRC determined the network peak hours (when the traffic volumes using the network are highest) and factored these baseline flows up to opening year and design year flows using TII growth factors.

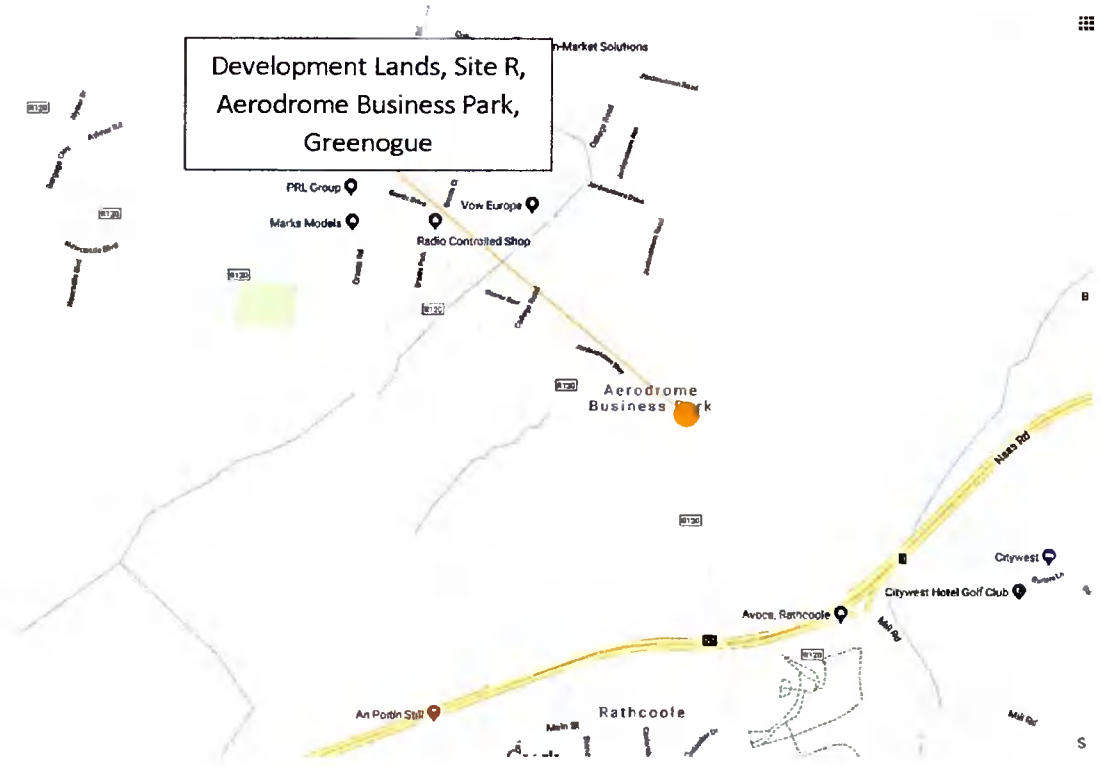


Figure 1.1: Site Location, Aerodrome Business Park, Greenogue (source: www.google.ie/maps)

Committed traffic on nearby lands that will use the R120 and the key junctions (that is developments which are permitted/under construction and are expected to be operational in the opening and design years) has been taken from the previous TIA work for these developments and included in the Do Nothing and Do Something scenarios for this TIA.

Development vehicle trip generation rates have been applied for the proposed land use areas and assigned to the network using existing turning proportions for the existing Aerodrome Business Park access on the roundabout. From this the percentage impact on the key road network can be determined, due to proposed development traffic, in the opening and future years.

In the event that the impact is greater than defined thresholds, modelling of the junctions can be undertaken to confirm adequate capacity to accommodate the development.

2 SITE LOCATION & EXISTING CONDITIONS

2.1 GENERAL

The site is identified in Figures 1.1 and 2.1 and is currently only accessed by a field gate on the R120 College Lane.

As shown in Fig 2.1, the application includes a section of land that will provide for a new road connection from Jordanstown Road, which forms the eastern spine road within the Aerodrome Business Park.

The new access location is 400m from the Aerodrome Roundabout This roundabout forms the eastern access to the Business Park from the R120 College Lane (the Newcastle road).

The N7 Junction 4 (the Rathcoole Interchange) is approximately 750m southwest of the Aerodrome Roundabout via College Lane.

2.2 ROAD NETWORK

The R120 (College Lane) is a two-lane single carriageway which extends from Rathcoole/Saggart on the south side of the N7 to Newcastle to the north, and forms part of the N7 Junction 4 interchange at the eastern end of Rathcoole Main Street. Between the N7 and Newcastle, there is limited direct frontage development, and there are several roundabout junctions serving the Greenogue lands, and several priority junctions and individual dwelling and field gate accesses.

The key junction on the R120 which will service the development site is the R120 Aerodrome Roundabout, which is a 29m central island and 48m outer diameter, and is currently a three-arm arrangement, with single-lane entries and exits. A fourth arm is to be constructed at the roundabout (opposite the Jordanstown Road access) as part of the SD20A/0258 site development works, and new signal-controlled pedestrian crossings and a southwestern footpath is to be provided on the R120 as part of that development.

Further west, the R120 Greenogue Roundabout has also recently been upgraded from a three-arm to a four-arm arrangement in connection with a planning permission SD18A/0265 for a warehouse development which is currently being implemented. It is offset into the north side of the road and also serves the College Road spine road section of the Greenogue Business Park. It has a 29m central island and a 45m outer diameter, with single-lane entries and exits.

The section of the R120 from just north of the Junction 4 interchange roundabout to just southeast of the Greenogue Roundabout is currently 60kph, although it is understood that SDCC are undertaking a review of speed limits and there is potential this section may be reduced to 50kph in future to address the changing nature of the area and provide a consistent speed limit between Rathcoole Interchange and the Newcastle Roundabout.

Figure 2.1: Site Location and Surrounding Greenogue Lands (source: www.google.ie/maps)

2.3 Existing Traffic Flows

Having regard for Covid-19 impacts on traffic flows due to working from home and restrictions on certain activities, SRC have utilised data which was collected on Thursday 26th April 2018 for a previous project in Greenogue using continuous traffic counts from 07.00-19.00.

Key flows at the Aerodrome Roundabout are as follows:

- 08.00-09.00 AM peak hour (total inflow volume 2,085 pcu):
    - 839 pcu eastbound and 934 pcu westbound on the R120 to the west of the Aerodrome Roundabout;
    - 869 pcu eastbound and 1,150 pcu westbound on the R120 to the east of the Aerodrome Roundabout;
    - 298 pcu northbound and 105 pcu southbound on the Jordanstown Road access arm of the Business Park;
- 16.00-17.00 PM peak hour (total inflow volume 1,826 pcu):
    - 771 pcu eastbound and 807 pcu westbound on the R120 to the west of the Aerodrome Roundabout;
    - 926 pcu eastbound and 835 pcu westbound on the R120 to the east of the Aerodrome Roundabout;
    - 94 pcu northbound and 221 pcu southbound on the Jordanstown Road access arm of the Business Park.

The counts were also carried out at the Greenogue Roundabout, the Advanced Waste Recycling access on the R120, and the three roundabout junctions which form the N7 Junction 4 Interchange and the connections to Rathcoole and Saggart.

Full traffic count data and flow diagrams for each junction is appendicised to this report.

It is proposed to factor these 2018 baseline traffic counts to 2023 using standard TII growth factors to create a proxy for robust opening year traffic volumes.

2.4 Pedestrian and Cyclist Accessibility

There is footpath provision on Jordanstown Road in the vicinity of the site, and on the northern/easternmost side of the R120, and short sections of footpath on the south side, with extensions and new footpath on the southern/westernmost side of the R120 being carried out per the conditions of the SD18A/0265 grant which required provision of a footpath along the northern frontage (on the south side of the R120) and new dropped kerb crossing points across the R120 at the Greenogue Roundabout and the SD20A/0258 grant which required provision of a footpath along the northern frontage (on the south side of the R120) and new controlled pedestrian crossings on the R120, located 60m to the northwest and 60m to the southeast of the centre of the Aerodrome Roundabout.

There is street lighting along the R120.

There are no dedicated cyclist provisions on the R120.

2.5 Public Transport Accessibility

There are Dublin Bus services operating along the R120, to/from Newcastle with stops to the west of the Greenogue Roundabout, and on College Road just to the north of the Greenogue Roundabout, served by the No.68 throughout the day (existing hourly service, May 2021).

There are also several buses stopping on the Northbound exit slip road for the Rathcoole Interchange and on the Southbound side of the N7, mostly commuter/interurban services. The no.69 also stops on Main Street Rathcoole to the west of the R120 roundabout and can be accessed at the interchange overbridge.

3 PROPOSED DEVELOPMENT

3.1 GENERAL

As set out in the introduction section of this report, the development of a commercial warehouse building on lands extending to 5.67Ha on the southeastern side of the Aerodrome Business Park (known as Site R) at Greenogue, Rathcoole, Co Dublin.

The application will comprise of the construction of a single warehouse building (overall GFA of 22,966 sq. m) with ancillary office and staff facilities, with the following floor areas and key elements:

- warehouse area (21,113 sq. m)
- ancillary office areas on three floors (1,163 sq. m)
- staff facilities on three floors (690 sq. m)
- serviced by a total of 30 loading docks
- 210 staff/visitor car parking spaces and 36 staff cycle parking spaces.
- New access roadway including verges and footpaths connecting to east side of Jordanstown Road with the Business Park
- Two new vehicle access points to the existing Site E on the north side of the new access roadway
- Associated site development works including lighting, services, car parking and circulation roadways, internal footpaths, boundary treatments and landscaping.

It should be noted that the office space is 5% of the overall gross floor area, confirming that it is ancillary to the primary function of development as commercial warehousing use.

3.2 ROAD ACCESS

The overall site layout is presented in the Kavanagh Burke site layout plan D1693-D3 Site Plan submitted with the application. The layout and the access junction to/from the HGV area have been tested using AutoTracking software to determine the adequacy of the access road and yard areas.

The proposed access road from the Jordanstown Road is 7.5m wide between kerbs. A 2m footpath behind a 1.8m grass service verge is proposed on both sides of the access road. The access to the car park is located 100m from the proposed junction on Jordanstown Road, while the HGV access to the marshalling yard areas is located a further 75m east at the end of the proposed access road, with a turning head area proposed to accommodate HGVs. As part of the agreement to develop the access roadway, two new accesses to the Site E lands are proposed from the northern side of the access roadway.

The car park access roadway is 6m wide between kerbs and runs southwards from the access road along the western boundary of the site. A 2m footpath is proposed along the eastern side of the car park access road. Entry to the car park roadway and to the separate HGV access is to be controlled by sliding access gates (the car park access will be kept open at peak times when staff are arriving and departing to ensure there is not a back-up of cars onto the access road).

At the south west corner of the proposed building, the car park access roadway extends east along the south elevation of the building and west into the strip formed by the existing access from the field gate. Parking is proposed along part of the area with a turning head at the end of it.

A fire path will also be provided around the perimeter of the building.

Stop road markings and signage at the exits from the car park and HGV yard will be installed as part of the site development works, in accordance with the Traffic Signs Manual (TSM).

3.3 Pedestrian Access

A 2m footpath is proposed from the building entrance to the R120 College Lane. The existing field gate will be replaced by a controlled pedestrian/cycle access gate incorporated into a boundary wall topped with railings to match the existing boundary treatment on the adjoining site to the west. The gate will be operated by a swipe or key fob issued to staff by the occupant of the unit which will allow staff travelling on foot or by bike to access the site with a greatly reduced walking/cycling distance from the R120.

3.4 Car Parking Standards and Provision

Car parking for the development is to be provided with reference to the South Dublin Development Plan 2016-2022 parking standards for development, which set out at Table 11.23 the maximum permissible for different land uses.

Car parking for the development is to be provided having regard for the SDCC Development Plan standards, which set out maximum requirements of 1/100 sq.m for commercial warehousing (employment), which would equate to a maximum of 230 spaces for a total GFA of 22,966 sq. m.

It is proposed to provide 210 spaces (including 5 wheelchair accessible spaces). This provision is within the requirements of the Development Plan.

There is provision for 21 of the spaces (10% of the total) to be for EV use and installed with EV charging points, with ducting to facilitate future expansion of the EV charging equipment, if demands arise.

3.5 Cycle Parking Standards and Provision

The SDCC Development Plan standards out minimum requirements at Table 11.22 for Enterprise and Employment (manufacturing and offices) of 1 space/200 square metres GFA (long-term).

Having regard for the particular nature of the development and the lack of dedicated cycle provision generally in the area, it is considered that the Development Plan level of provision would be excessive and therefore proposed to provide 18 Sheffield stands, located at three positions close to the admin/staff entrance of the building (a total of 36 cycle parking spaces for the development), and these are identified on the Kavanagh Burke site layout drawing submitted with the application. The cycle parking will be covered as required in the Development Plan for long stay (staff) use.

Lockers, showers and changing rooms are provided within the staff welfare area.

This will ensure that the staff who are based locally have cycle parking and facilities available to them, should they choose to travel by bike to/from work. Additional cycle parking facilities can easily be provided within the site if there is an increased demand in the future.

4 DEVELOPMENT TRAFFIC GENERATION

4.1 Trip Generation

The predicted development traffic generation is based on TRICS data of existing surveyed sites for distribution warehouse uses in Dublin and Leinster Regions.

The data in the TRICS site is for the overall floor area, and an element of office space (10% or less) would be inherent in these.

Land Use	Rate per	Weekday AM peak (08:00-09:00)		Weekday PM Peak (16:00-17:00)	
		Arrivals	Departures	Arrivals	Departures
Distribution Warehousing	100 sq. m	0.177	0.051	0.101	0.520

Table 4.1 – TRICS Trip Rates for Proposed Development

When the above trip rates are used in conjunction with the schedule of accommodation of the proposed development, the total trips generated can be found. These can be seen in Table 4.2 below.

Land Use	GFA	Weekday AM peak (08:00-09:00)		Weekday PM Peak (16:00-17:00)	
		Arrivals	Departures	Arrivals	Departures
Distribution Warehousing	22,966 sq. m	41	12	23	119

Table 4.2 – Vehicle Trips for Proposed Development

Clearly the levels of traffic generation during the network AM peak hour are not significant having regard for the scale and capacity of the road network serving the site. This is expected as the arrival profile for staff working at a commercial distribution warehouse is typically greater during the 07.00-08.00 hour preceding the network peak, when the background flows will be lower on the R120 junctions.

The impact is clearly more significant in the PM peak hour of 16.00-17.00 when there is a large volume of exiting traffic due to staff who had arrived pre-08.00 in the morning and would be finishing their working shift at that time, which is similar to the pattern of peak traffic in the Greenogue area.

4.2 TRIP DISTRIBUTION

The distribution of development traffic volumes has been based on a review of the turning proportions at existing accesses on Jordanstown Road to determine the percentage that will access the site from the Aerodrome Roundabout on the R120 and the percentage that will access the site from within the estate (i.e. having made a linked trip to/from the local shops beside the Plaza Roundabout) and/or from the Aylmer Road access to Greenogue, at the north west of the campus (for routes to the R134 and R136 network at Grangecastle, where a number of roads have been improved recently and this provides access to Clondalkin, Lucan and the N4 west).

The review of the existing sites determined the following distribution on Jordanstown Road:

A: Site Access – junction of new access roadway on Jordanstown Road:

- AM peak hour trip distribution:
  - Arrivals 88% from Aerodrome Roundabout; 12% from Jordanstown Road north;
  - Departures 91% to Aerodrome Roundabout, 9% to Jordanstown Road north.
- PM peak hour trip distribution:
  - Arrivals 93% from Aerodrome Roundabout; 7% from Jordanstown Road north;
  - Departures 87% to Aerodrome Roundabout, 13% to Jordanstown Road north.

The turning proportions in/out of Jordanstown Road at the Aerodrome Roundabout are as follows (SRC note: the percentages below are from the proportions of the existing movements, so these need to be multiplied by the percentages arriving to the site to/from the Aerodrome Roundabout at A above, i.e. development trips arriving from R120 east are 0.88 x 0.82 = 0.722, that is 72.2% of the total arrivals).

B: R120 Aerodrome Roundabout at south end of Jordanstown Road:

- AM peak hour turning proportions in out of Aerodrome Business Park (Jordanstown Road):
  - Arrivals 82% turn right from R120 east, 18% turn left from R120 west;
  - Departures 79% turn left to R120 east, 21% turn right to R120 west.
- PM peak hour turning proportions in out of Aerodrome Business Park (Jordanstown Road):
  - Arrivals 71% turn right from R120 east, 29% turn left from R120 west;
  - Departures 82% turn left to R120 east, 18% turn right to R120 west.

Link and Direction	AM Arrivals	AM Departures	PM Arrivals	PM Departures
Jordanstown Rd (north of access)	12%	9%	7%	13%
Jordanstown Rd (south of access)	88%	91%	93%	87%
	100%	100%	100%	100%
R120 east (to/from Rathcoole / N7)	72.2%	71.9%	66.0%	71.3%
R120 west (to from Newcastle)	15.8%	19.1%	27%	15.7%

Table 4.3 – Distribution of Development Trips AM and PM Peak Hours

When these proportions are applied against the proposed development trips from Table 4.2 the following development trips are generated for each link:

Link and Direction	AM Arrivals	AM Departures	PM Arrivals	PM Departures
Jordanstown Rd (north of access)	5	1	2	15
Jordanstown Rd (south of access)	36	11	21	104
	41	12	23	119
R120 east (to/from Rathcoole / N7)	30	8	14	74
R120 west (to from Newcastle)	6	4	7	30

Table 4.4 – Development Trips AM and PM Peak Hours

Upstream and downstream of the Aerodrome Roundabout junction the development traffic will continue through the R120 roundabouts, and from a review of the above tables it is clear the greater proportion is accessing the N7 interchange overbridge roundabouts where the traffic will disperse between the N7 westbound and eastbound, and the Rathcoole and Saggart village access roads.

The percentage impact of the development traffic on the R120 at the Aerodrome Roundabout and other key junctions is set out in the following section.

4.3 COMMITTED DEVELOPMENT TRAFFIC

Traffic generated by committed development which has planning permission/is currently under construction on the lands to the west of the R120 (accessed from the new arms on the Greenogue Roundabout and the Aerodrome Roundabout) and traffic generated by committed development sites within Aerodrome Business Park is included in network flow diagrams for the 2023 opening year and 2028 and 2038 design year projections both without (Do Nothing) and with (Do Something) traffic generated by the proposed development. This was taken from the TIAs prepared by SRC for the development of these lands.

5 DEVELOPMENT IMPACT

5.1 ASSESSMENT YEARS

The earliest opening year for the proposed development allowing for planning and construction would be 2023, and a +5 design year (2028) and +15 (2038) has also been considered.

In addition to the traffic generated by the proposed development there is also an expected increase in traffic flows due to general development and an increase in car ownership that needs to be taken into consideration when assessing future year junction capacity.

Traffic growth to 2023, 2028 and 2038 has been developed using the Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections PE-PAG-02017 (May 2019).

Figure 6.1 confirms that the site and the R120/N7 Naas Road which form the key links in the study road network are in the Dublin Metropolitan Area, and therefore Table 6.1. Central Growth Rates for LVs (as the traffic flows are in pcus) are utilised. The appropriate annual rates used are as highlighted in the Table below which is reproduced from the TII document.

Table 6.1: Link-Based Growth Rates: Metropolitan Area Annual Growth Rates

Metropolitan Area	Low Sensitivity Growth Rates						Central Growth Rates						High Sensitivity Growth Rates					
	2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Dublin	1.0146	1.0280	1.0034	1.0116	1.0028	1.0144	1.0162	1.0295	1.0051	1.0136	1.0044	1.0162	1.0191	1.0328	1.0087	1.0172	1.0093	1.0256
Cork	1.0153	1.0279	1.0072	1.0128	1.0065	1.0164	1.0169	1.0294	1.0090	1.0149	1.0083	1.0182	1.0202	1.0328	1.0125	1.0185	1.0166	1.0276
Galway	1.0154	1.0201	1.0077	1.0164	1.0079	1.0203	1.0169	1.0217	1.0097	1.0182	1.0095	1.0220	1.0203	1.0250	1.0131	1.0217	1.0178	1.0313
Limerick	1.0158	1.0313	1.0052	1.0113	1.0050	1.0158	1.0174	1.0329	1.0070	1.0134	1.0069	1.0177	1.0218	1.0364	1.0106	1.0171	1.0146	1.0273
Waterford	1.0123	1.0301	1.0031	1.0131	1.0029	1.0175	1.0140	1.0317	1.0052	1.0153	1.0050	1.0184	1.0173	1.0352	1.0091	1.0194	1.0122	1.0300

Figure 5.1: Table 6.1. of PE-PAG-02017 (TII)

The annual rate for each period is used to develop a compound factor for the required years.

Therefore, the 2018 surveyed base year flows were factored up as follows:

- by 8.37% for an Opening year of 2023
- by 17.43% for an Opening Year +5 of 2028
- by 25.42% for an Opening Year +15 of 2038

5.2 PERCENTAGE IMPACT ON KEY JUNCTIONS

The IHT and TII Guidelines for Transport Assessments state that the thresholds for junction analysis in Transport Assessments are as follows:

- *"Traffic to and from the development exceeds 10% of the existing two-way traffic flow on the adjoining highway."*

- *"Traffic to and from the development exceeds 5% of the existing two-way traffic flow on the adjoining highway, where traffic congestion exists or will exist within the assessment period or in other sensitive locations".*

R120 to south of Aerodrome Roundabout (Link J2-J3)

As noted in the previous section, the majority of development traffic will arrive and depart on the southern section of Jordanstown Road, passing through the Aerodrome Roundabout (i.e. in the AM peak hour there is a total of 47 pcu and in the PM peak hour there is a total of 125 pcu), with an element to/from the west to/from Newcastle, but with the predominant percentage of development traffic arriving from and departing to the southeast (to/from the N7 Junction 4).

Therefore, the worst case impact on the R120 to the south of the Aerodrome Roundabout (link J2-J3) during weekday peak hour conditions is as follows (comparing the Do Nothing and Do Something two-way total link flows):

- R120 south of Aerodrome Roundabout 2023 AM peak hour 2,384 v 2,417 pcu = +1.38%
- R120 south of Aerodrome Roundabout 2023 PM peak hour 2,194 v 2,282 pcu = +4.01%

R120 to South of Advanced Waste Access (Link J3-J4)

The worst case impact on the R120 to the south of the Advanced Waste Recycling priority junction during weekday peak hour conditions is as follows (comparing the Do Nothing and Do Something flows):

- R120 south of Advanced Waste 2023 AM peak hour 2,381 v 2,414 pcu = +1.39%
- R120 south of Advanced Waste 2023 PM peak hour 2,208 v 2,296 pcu = +3.99%

R120 Overbridge at N7 Junction 4 (Link J4-J5)

The worst case impact on the R120 overbridge at the N7 Junction 4 during weekday peak hour conditions is as follows (comparing the Do Nothing and Do Something flows):

- R120 south of N7J4 Northern Roundabout 2023 AM peak hour 2,173 v 2,199 pcu = +1.20%
- R120 south of N7J4 Northern Roundabout 2023 PM peak hour 1,869 v 1,901 pcu = +1.71%

R120 to east of Rathcoole Village Roundabout (Link J5-J6)

The worst case impact on R120 to the east of Rathcoole Village Roundabout (passing Avoca) during weekday peak hour conditions is as follows (comparing the Do Nothing and Do Something flows):

- R120 east of Rathcoole Village Roundabout 2023 AM peak hour 1,846 v 1,872 pcu = +1.41%
- R120 east of Rathcoole Village Roundabout 2023 PM peak hour 1,866 v 1,898 pcu = +1.71%

N7 Westbound Exit Slip to J6

The worst case impact on the N7 Junction 4 westbound exit slip during weekday peak hour conditions is as follows (comparing the Do Nothing and Do Something flows):

- N7-J4 Westbound Exit Slip 2023 AM peak hour 841 v 864 pcu = +2.73%
- N7-J4 Westbound Exit Slip 2023 PM peak hour 804 v 814 pcu = +1.24%

It should be noted that the percentage impact at each junction in the 2023 opening year will diminish slightly in the 2028 and 2038 design years as the background traffic growth increases the Do-Nothing total flow, while the development trips remain constant for each assessment year.

From the foregoing, it is clear that the proposed development will not have any significant traffic impacts on the road network during the AM or PM peak period, and the volume of off-peak movements are also at a level which will not result in operational issues for the road network or impact on road user safety.

5.3 Operational Traffic Mitigation Measures

It is submitted that there are no specific traffic mitigation measures required to accommodate the proposed development.

6 SUMMARY

6.1 GENERAL

Stephen Reid Consulting Traffic and Transportation Limited (SRC) have prepared this report on behalf of Exeter Ireland Property IV C Limited in support of a planning application to be submitted to South Dublin County Council (SDCC) for development of lands at Greenogue, to the east side of the Aerodrome Business Park (known as Site R), at Greenogue, Rathcoole, Co Dublin.

The development comprises construction of a commercial warehouse with ancillary office accommodation and staff welfare in a building totalling 22,966 sq. m GFA.

A new access (in lieu of the existing field gate access on the R120) is to be formed as a new junction on the east side of the Jordanstown Road, 400m from the Aerodrome Roundabout access to the Business Park. The access road is to be 7.5m wide with a 1.8m verge and 2m footpath on each side.

The car park for staff and visitors is accessed separately from the HGV access to the marshalling yards and loading dock areas. There is to be a total of 210 car parking spaces (including 10 disabled spaces and 21 EV charging spaces), and 36 cycle parking spaces.

A 2m footpath is proposed along one side of the 6m car park access road. Pedestrian access is to be provided from the new access road and from the R120 College Road with a controlled access to reduce walking/cycling distances for staff accessing the R120 to Newcastle/Rathcoole.

Pedestrians will not be permitted to walk through the vehicle access gates, limiting interaction with cars within the car par areas. Within the car park area, pedestrian routes link to the reception/main entrance.

No pedestrians, cyclists or staff/visitor cars will be permitted to use the HGV access to enter/exit the development.

Traffic count data from per-Covid work was used to create baseline robust flows and factored using TII rates for the predicted opening and design years.

Committed traffic from nearby granted developments has also been included in the Do Nothing modelling for the opening and design years.

Traffic generation has been based on TRICS data for similar land uses.

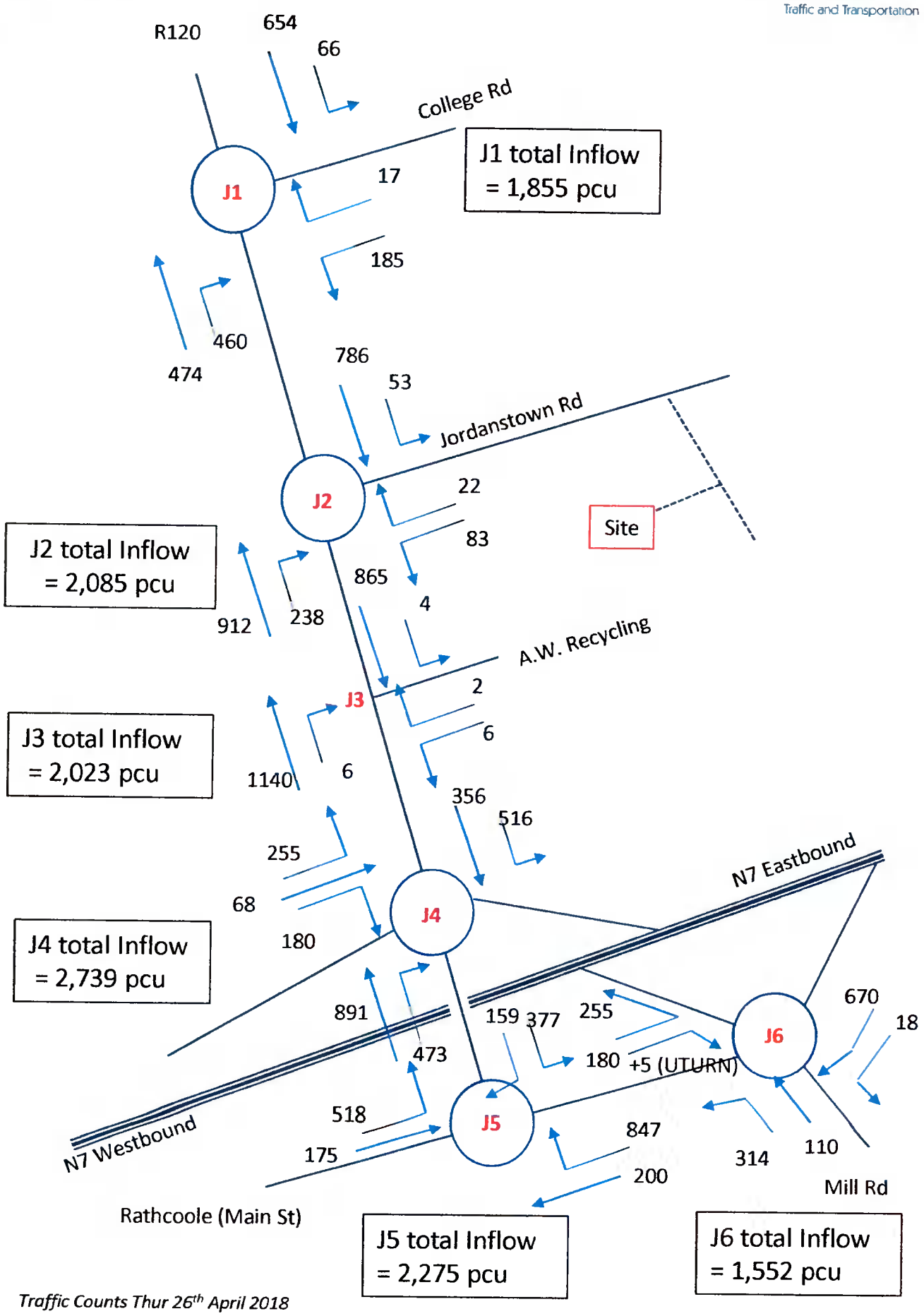
It can be seen from the commentary in this TIA that the volumes of traffic generated by the proposed development will not be significant during the network peak hours, and while there is a higher volume of traffic during the network PM peak hour, this can be accommodated by the proposed access arrangements and internal layout measures without excessive queuing or delays.

Therefore, it is submitted that the development as proposed is in accordance with the proper planning and sustainable development of the area.

Stephen Reid Consulting Traffic and Transportation
24.05.2021

Appendices

Stephen Reid Consulting
Traffic and Transportation



J1 total Inflow = 1,855 pcu

J2 total Inflow = 2,085 pcu

J3 total Inflow = 2,023 pcu

J4 total Inflow = 2,739 pcu

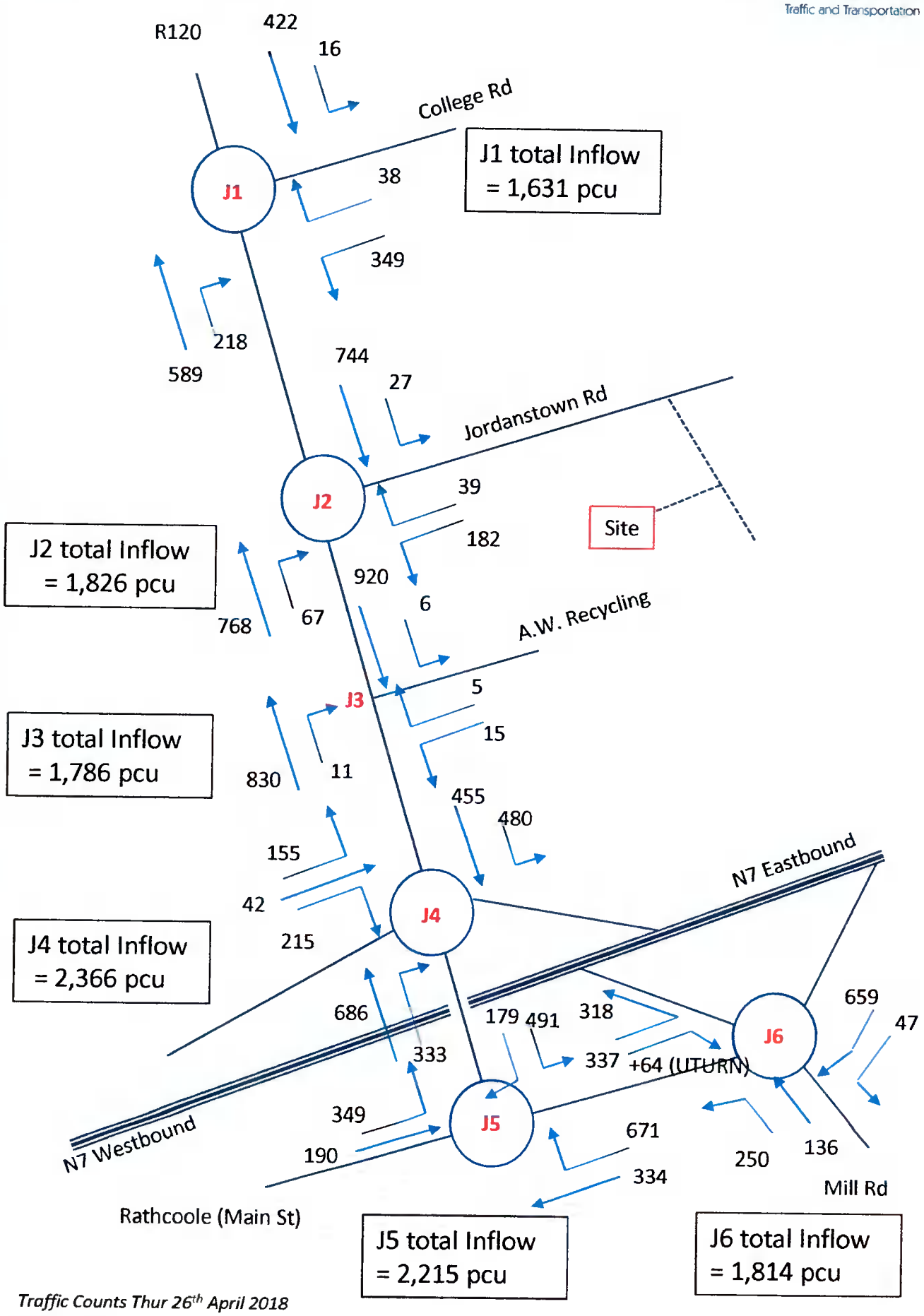
J5 total Inflow = 2,275 pcu

J6 total Inflow = 1,552 pcu

Traffic Counts Thur 26th April 2018
flows in pcu/hr

Diagram 1(a) : 2018 Weekday AM Peak Hour 08.00-09.00

Stephen Reid Consulting
Traffic and Transportation



J1 total Inflow = 1,631 pcu

J2 total Inflow = 1,826 pcu

J3 total Inflow = 1,786 pcu

J4 total Inflow = 2,366 pcu

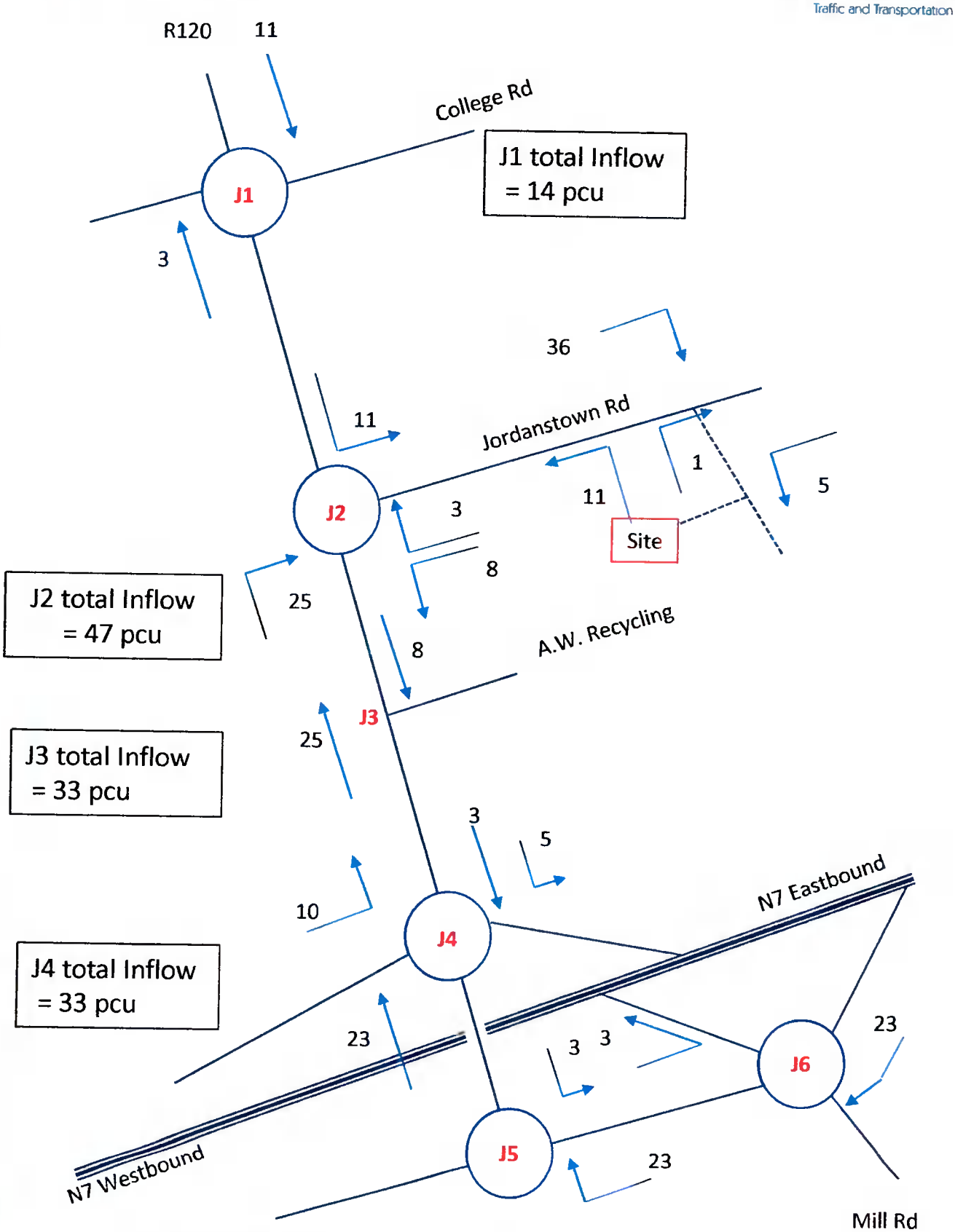
J5 total Inflow = 2,215 pcu

J6 total Inflow = 1,814 pcu

Traffic Counts Thur 26th April 2018
flows in pcu/hr

Diagram 1(b) : 2018 Weekday PM Peak Hour 16.00-17.00

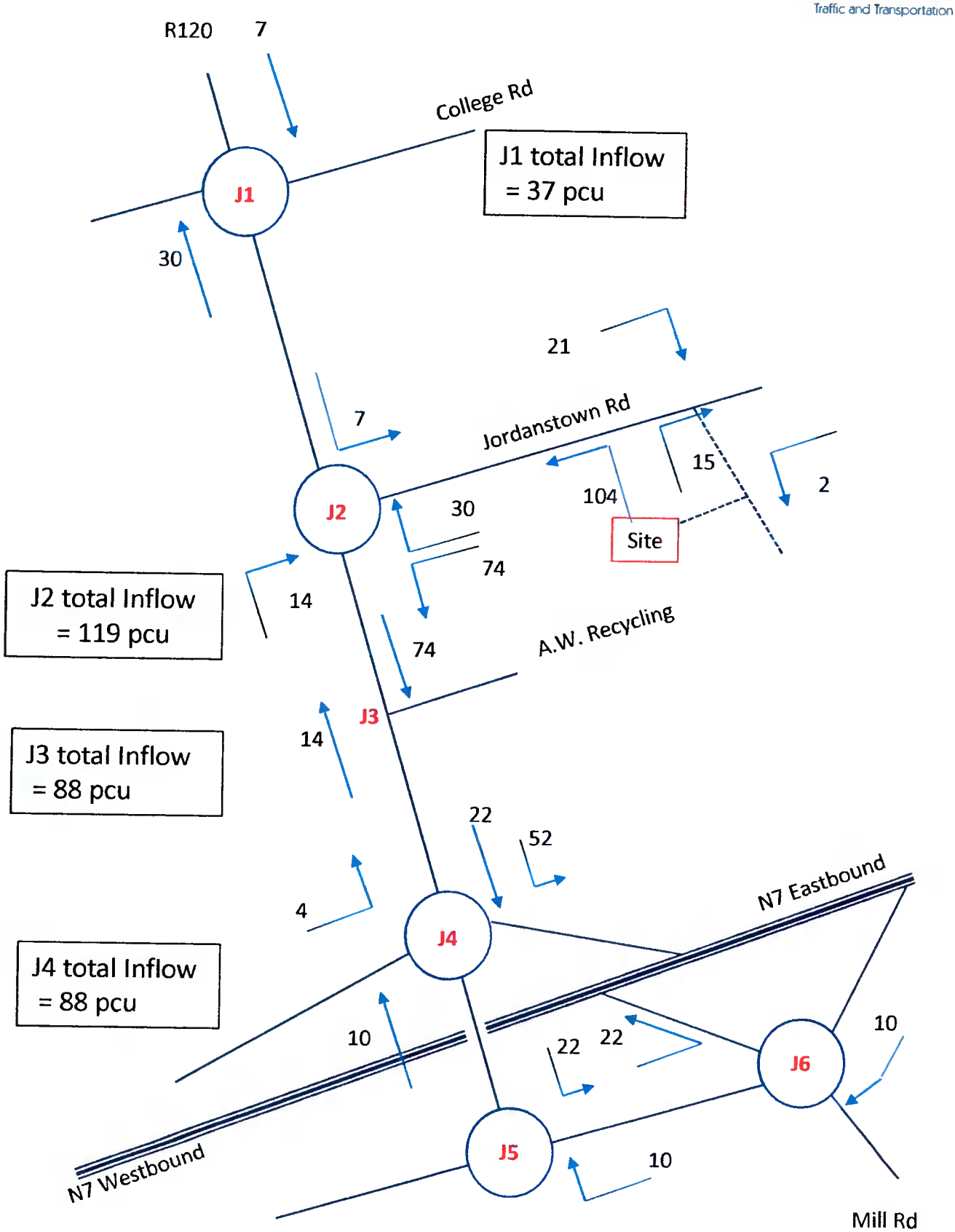
Stephen Reid Consulting
Traffic and Transportation



Based on assumptions in Chapter 4 of TIA
flows in pcu/hr

Diagram 2(a) : Operational Development Traffic – AM Peak Hour

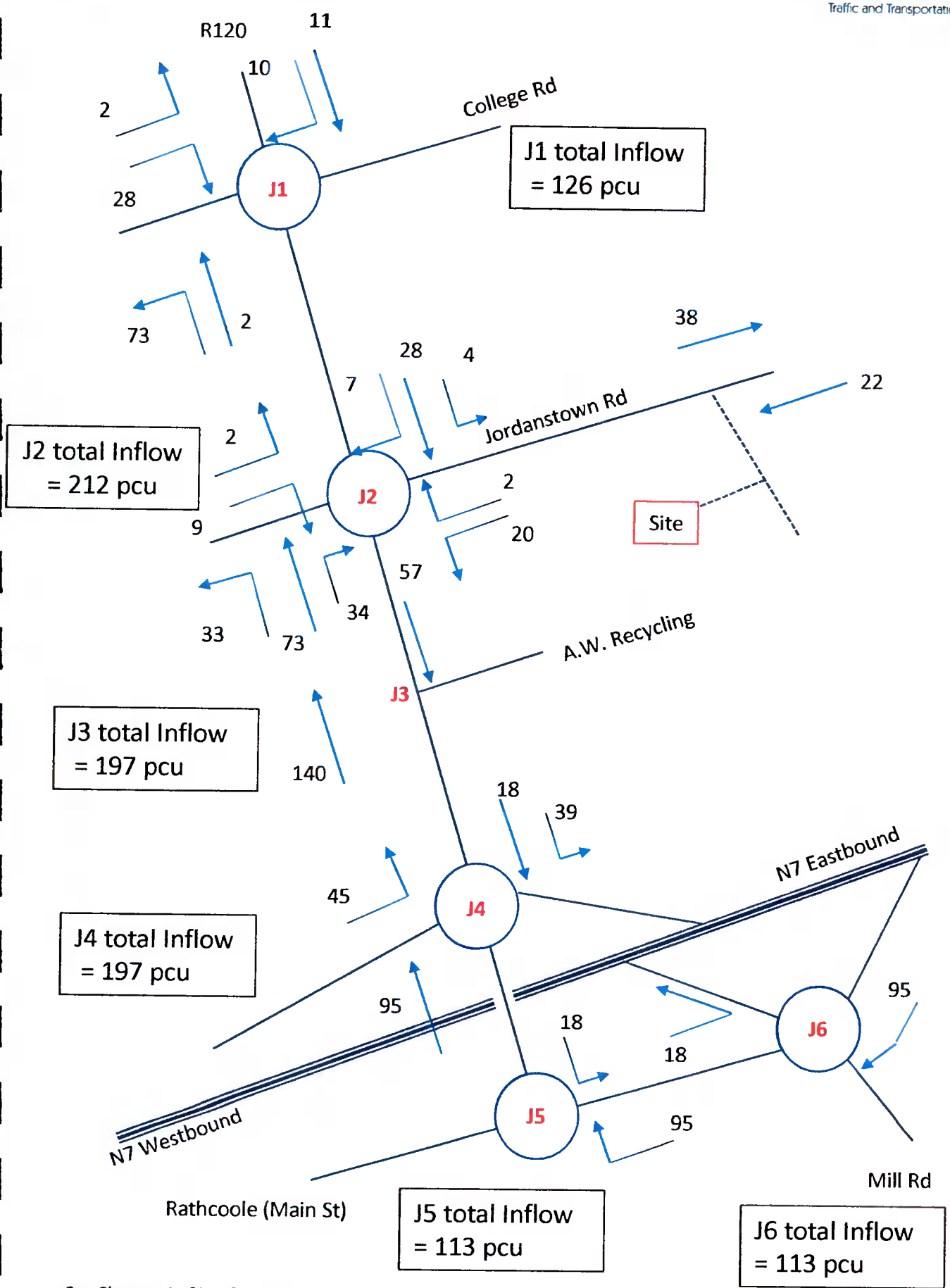
Stephen Reid Consulting
Traffic and Transportation



Based on assumptions in Chapter 4 of TIA
flows in pcu/hr

Diagram 2(b) : Operational Development Traffic – PM Peak Hour

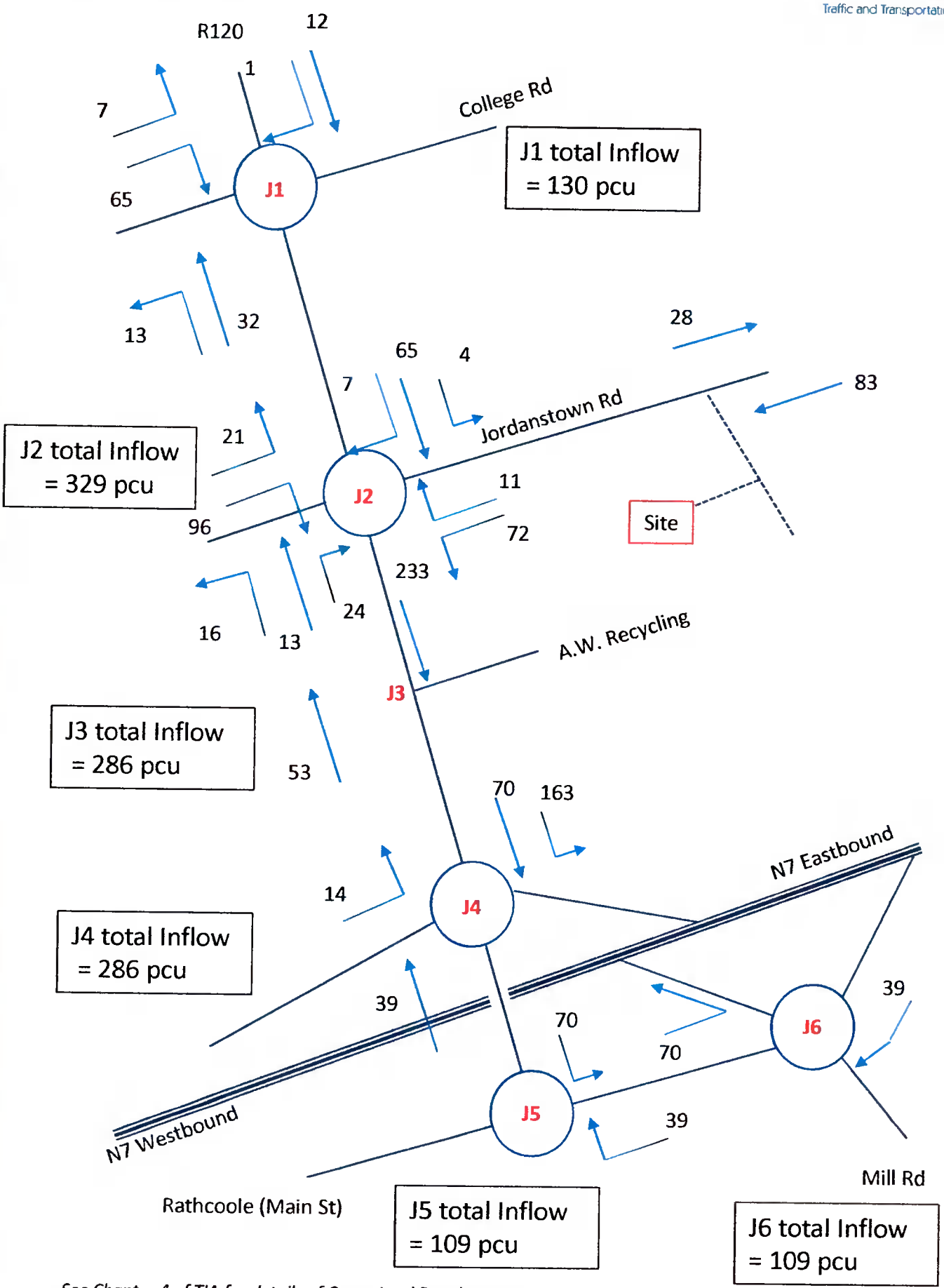
Stephen Reid Consulting
Traffic and Transportation



See Chapter 4 of TIA for details of Committed Developments
flows in pcu/hr

Diagram 3(a) : Committed Development Traffic AM Peak Hour 08.00-09.00

Stephen Reid Consulting
Traffic and Transportation



See Chapter 4 of TIA for details of Committed Developments
flows in pcu/hr

Diagram 3(b) : Committed Development Traffic AM Peak Hour 16.00-17.00

Stephen Reid Consulting
Traffic and Transportation

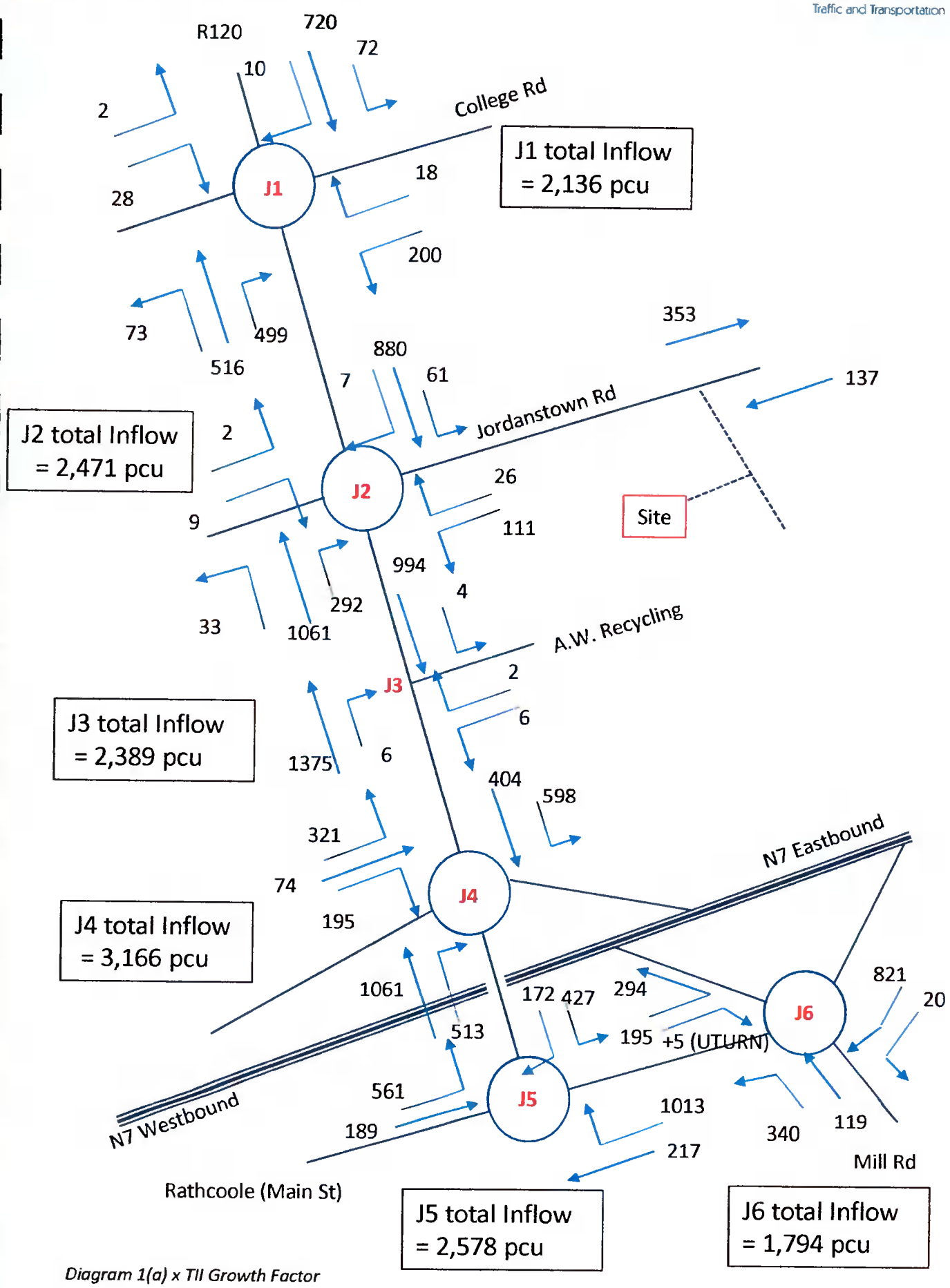
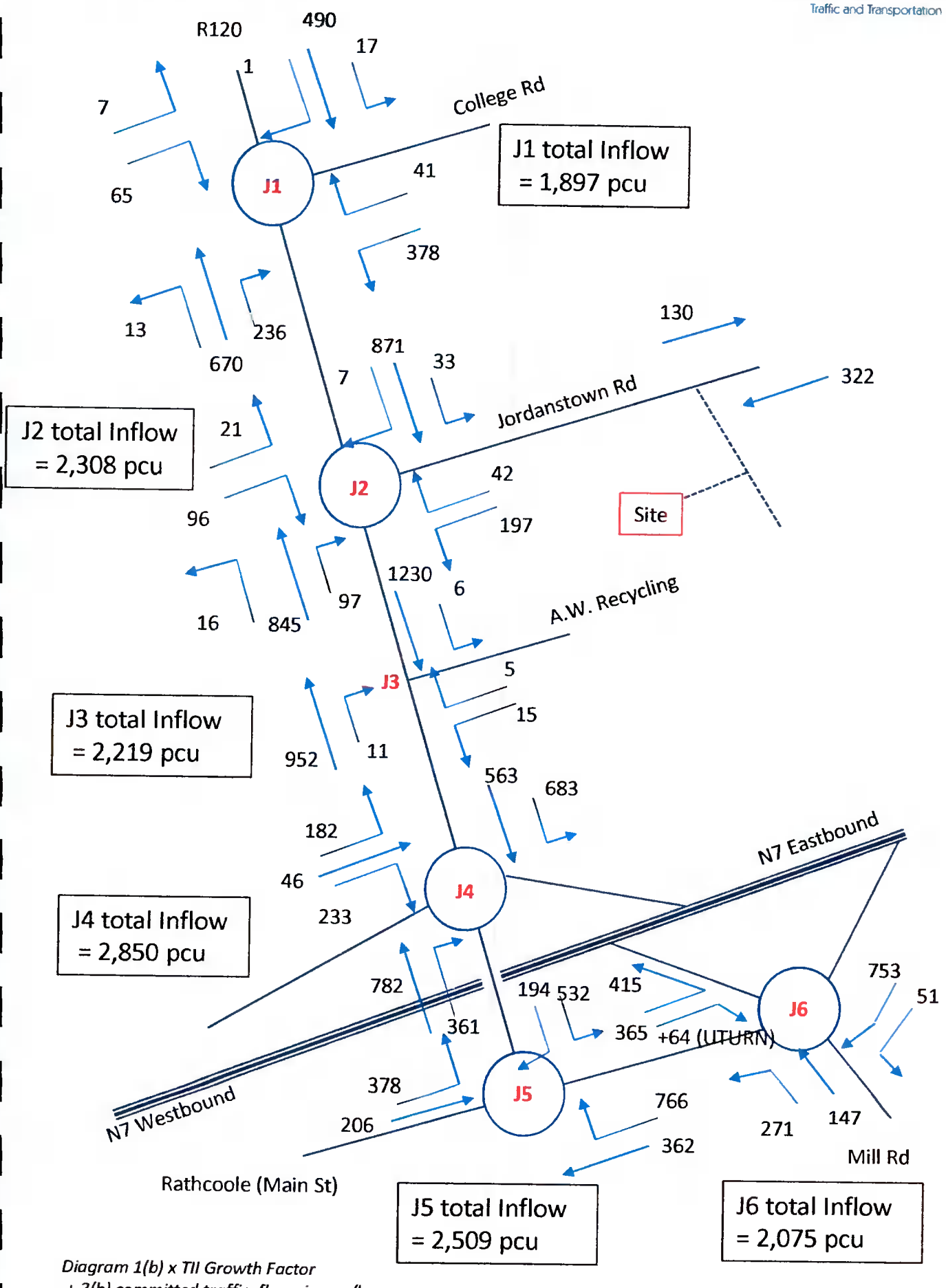


Diagram 1(a) x TII Growth Factor
+ 3(a) committed traffic, flows in pcu/hr

Diagram 4(a) : 2023 Opening Year Weekday AM Peak Hour 08.00-09.00 – Do Nothing

Stephen Reid Consulting
Traffic and Transportation



J1 total Inflow
= 1,897 pcu

J2 total Inflow
= 2,308 pcu

J3 total Inflow
= 2,219 pcu

J4 total Inflow
= 2,850 pcu

J5 total Inflow
= 2,509 pcu

J6 total Inflow
= 2,075 pcu

Diagram 1(b) x TII Growth Factor
+ 3(b) committed traffic, flows in pcu/hr

Diagram 4(b) : 2023 Opening Year Weekday PM Peak Hour 16.00-17.00 - Do Nothing

Stephen Reid Consulting
Traffic and Transportation

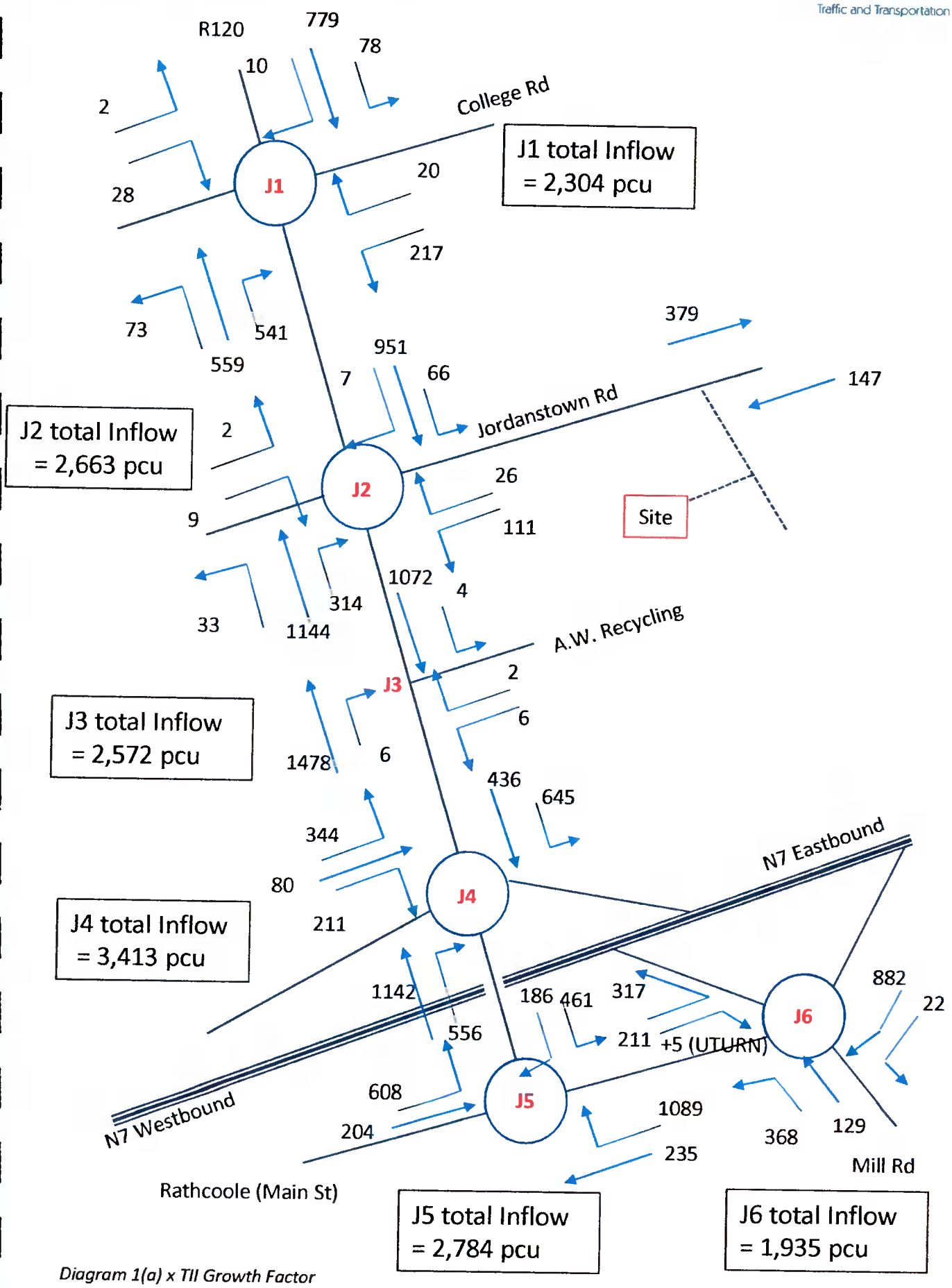


Diagram 1(a) x TII Growth Factor
+ 3(a) committed traffic, flows in pcu/hr

Diagram 5(a) : 2028 Opening Year+5 Weekday AM Peak Hour 08.00-09.00 – Do Nothing

Stephen Reid Consulting
Traffic and Transportation

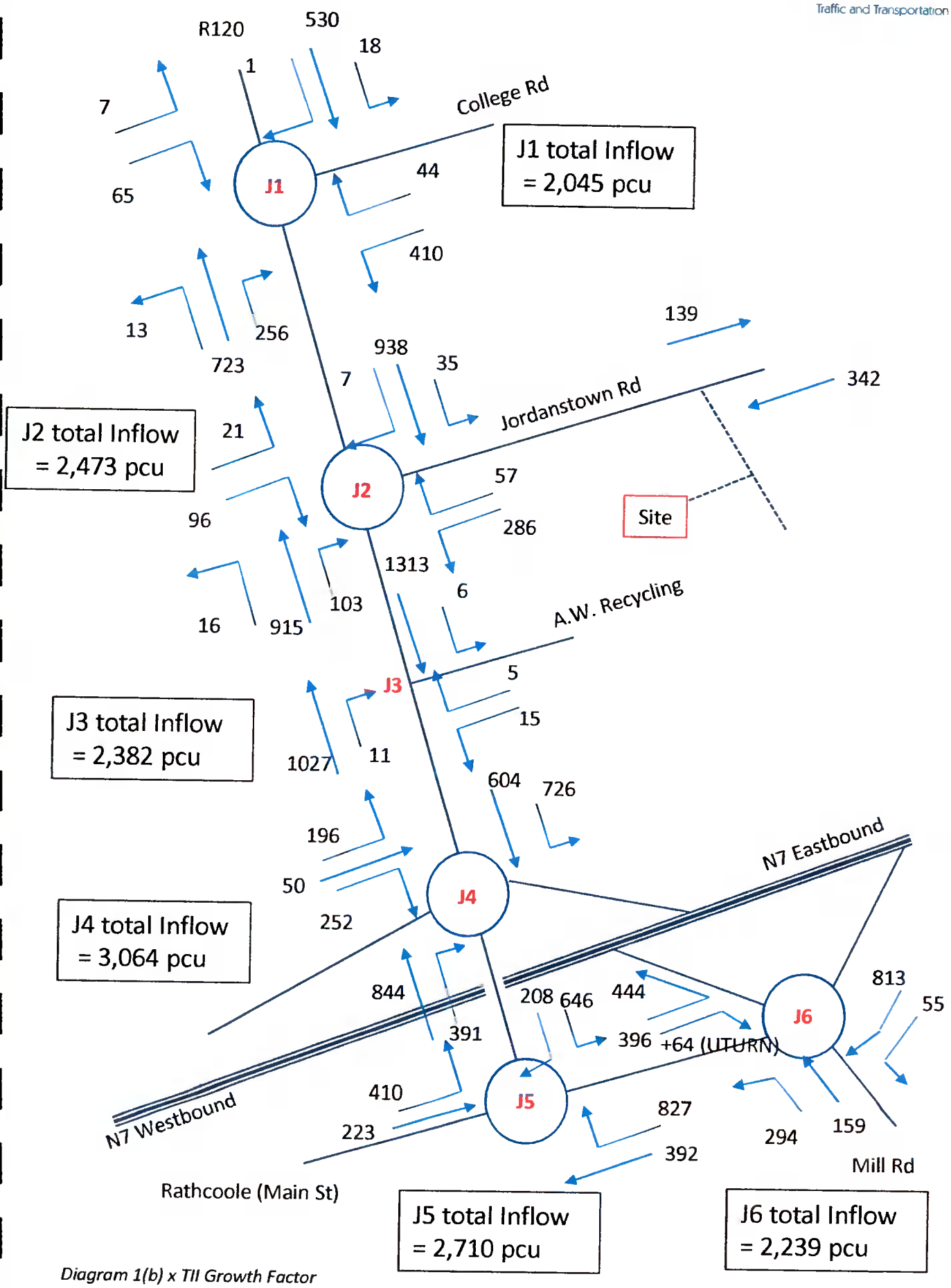
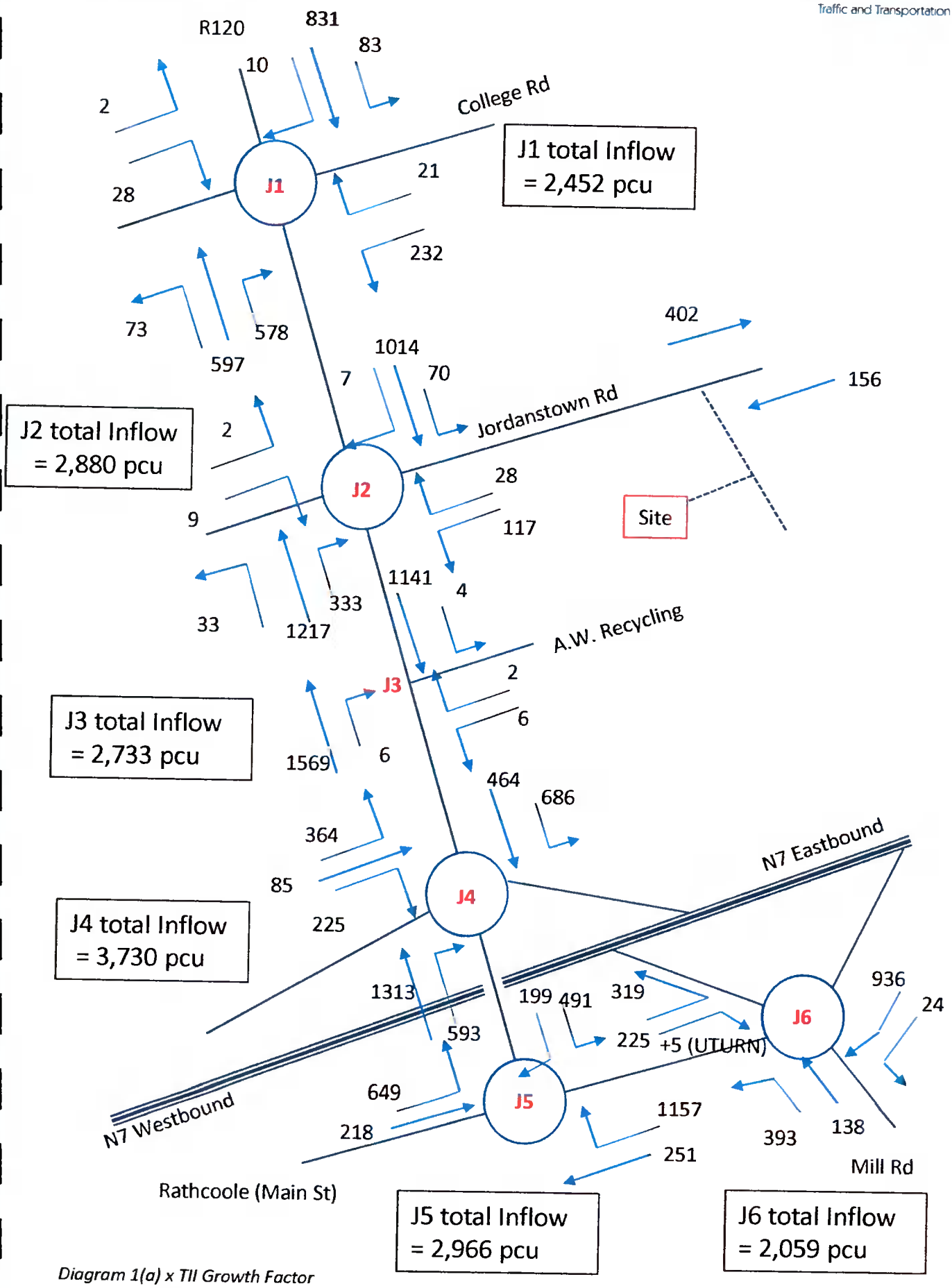


Diagram 1(b) x TII Growth Factor
+ 3(b) committed traffic, flows in pcu/hr

Diagram 5(b) : 2028 Opening Year+5 Weekday PM Peak Hour 16.00-17.00 - Do Nothing

Stephen Reid Consulting
Traffic and Transportation



J1 total Inflow = 2,452 pcu

J2 total Inflow = 2,880 pcu

J3 total Inflow = 2,733 pcu

J4 total Inflow = 3,730 pcu

J5 total Inflow = 2,966 pcu

J6 total Inflow = 2,059 pcu

Diagram 1(a) x TII Growth Factor
+ 3(a) committed traffic, flows in pcu/hr

Diagram 6(a) : 2038 Opening Year+15 Weekday AM Peak Hour 08.00-09.00 – Do Nothing

Stephen Reid Consulting
Traffic and Transportation

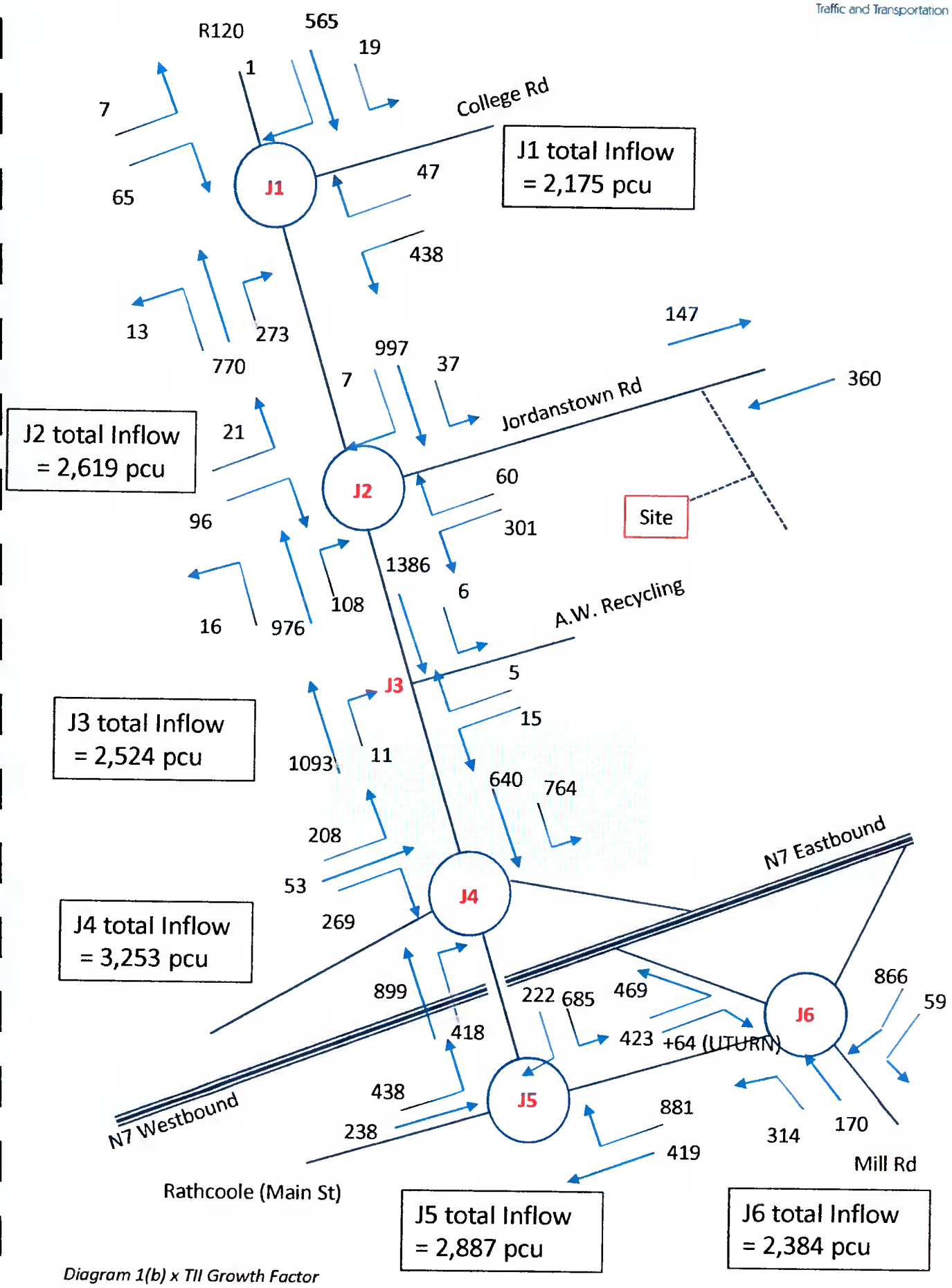


Diagram 1(b) x TII Growth Factor
+ 3(b) committed traffic, flows in pcu/hr

Diagram 6(b) : 2038 Opening Year+15 Weekday PM Peak Hour 16.00-17.00 - Do Nothing

Stephen Reid Consulting
Traffic and Transportation

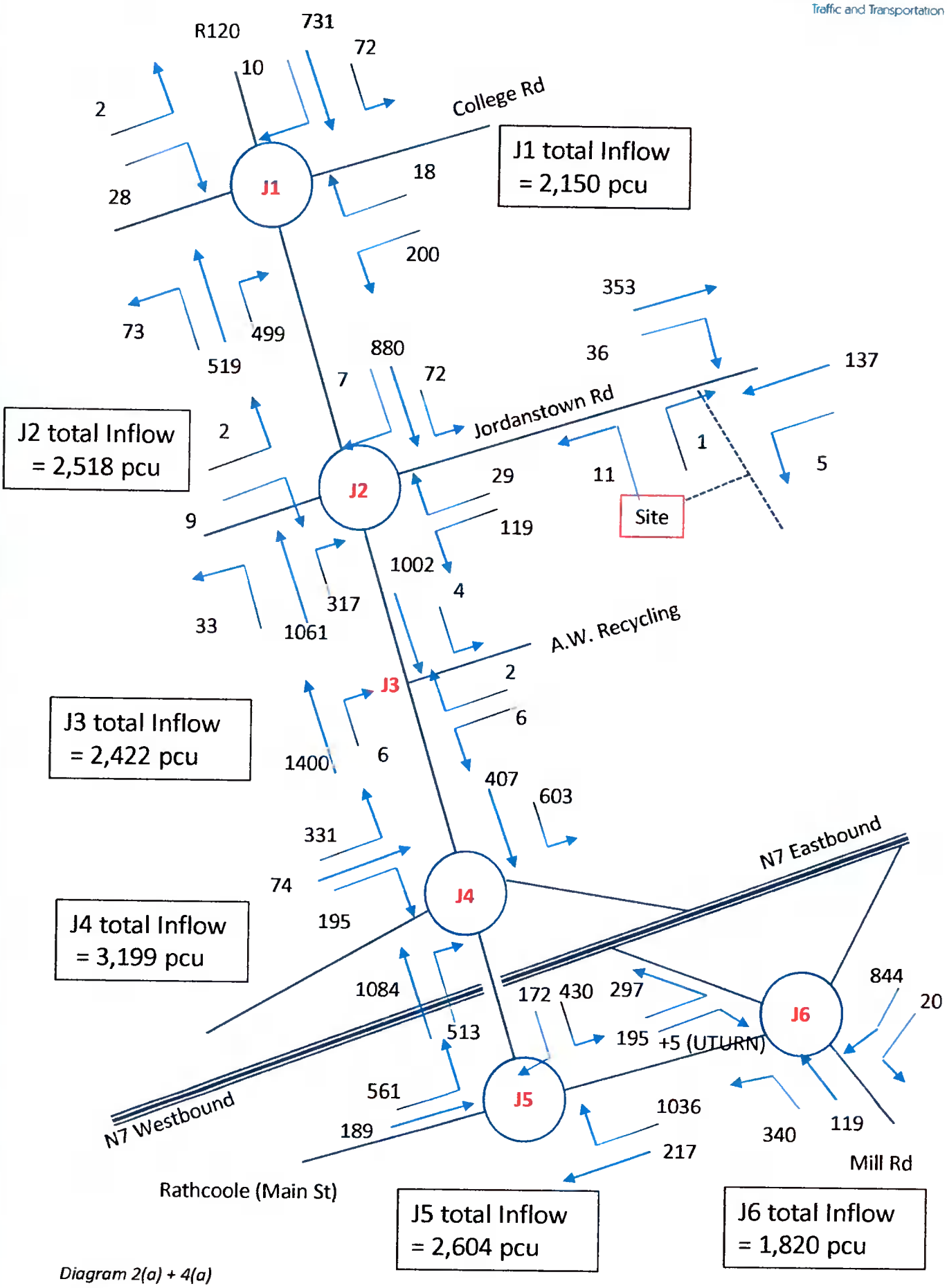


Diagram 2(a) + 4(a)
flows in pcu/hr

Diagram 7(a) : 2023 Opening Year Weekday AM Peak Hour 08.00-09.00 – Do Something

Stephen Reid Consulting
Traffic and Transportation

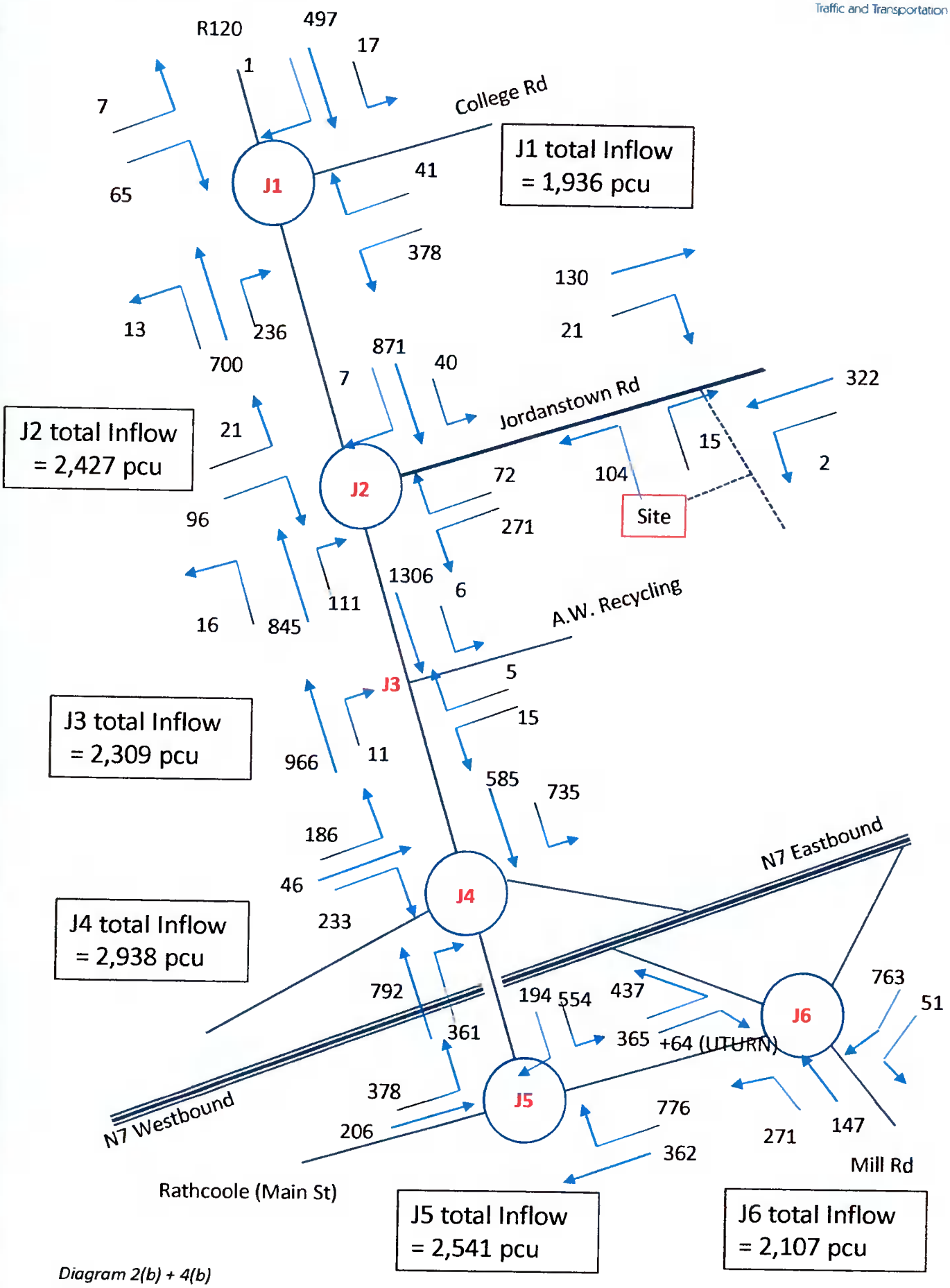


Diagram 2(b) + 4(b)
flows in pcu/hr

Diagram 7(b) : 2023 Opening Year Weekday PM Peak Hour 16.00-17.00 - Do Something

Stephen Reid Consulting
Traffic and Transportation

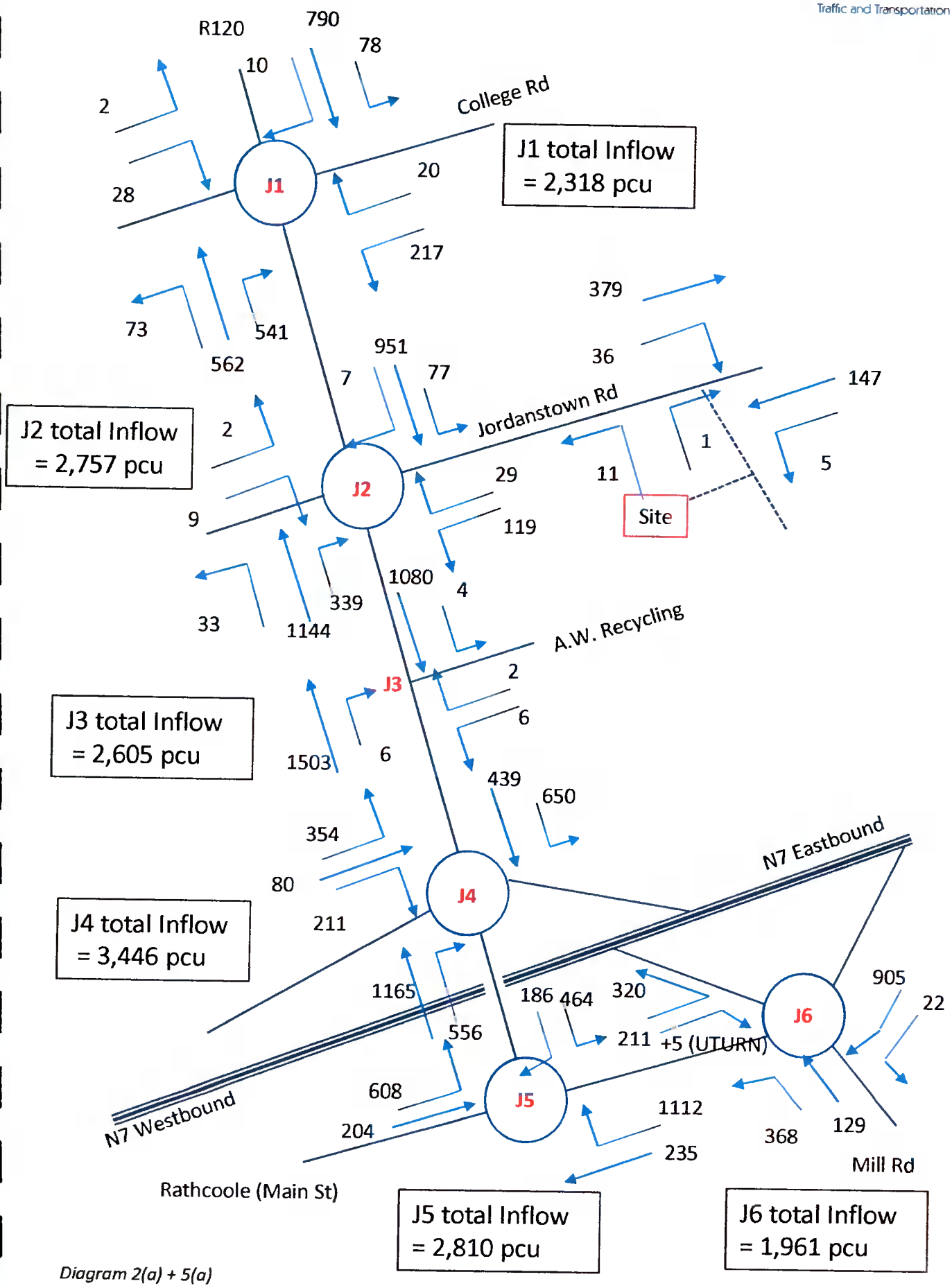


Diagram 2(a) + 5(a)
flows in pcu/hr

Diagram 8(a) : 2028 Opening Year+5 Weekday AM Peak Hour 08.00-09.00 – Do Something

Stephen Reid Consulting
Traffic and Transportation

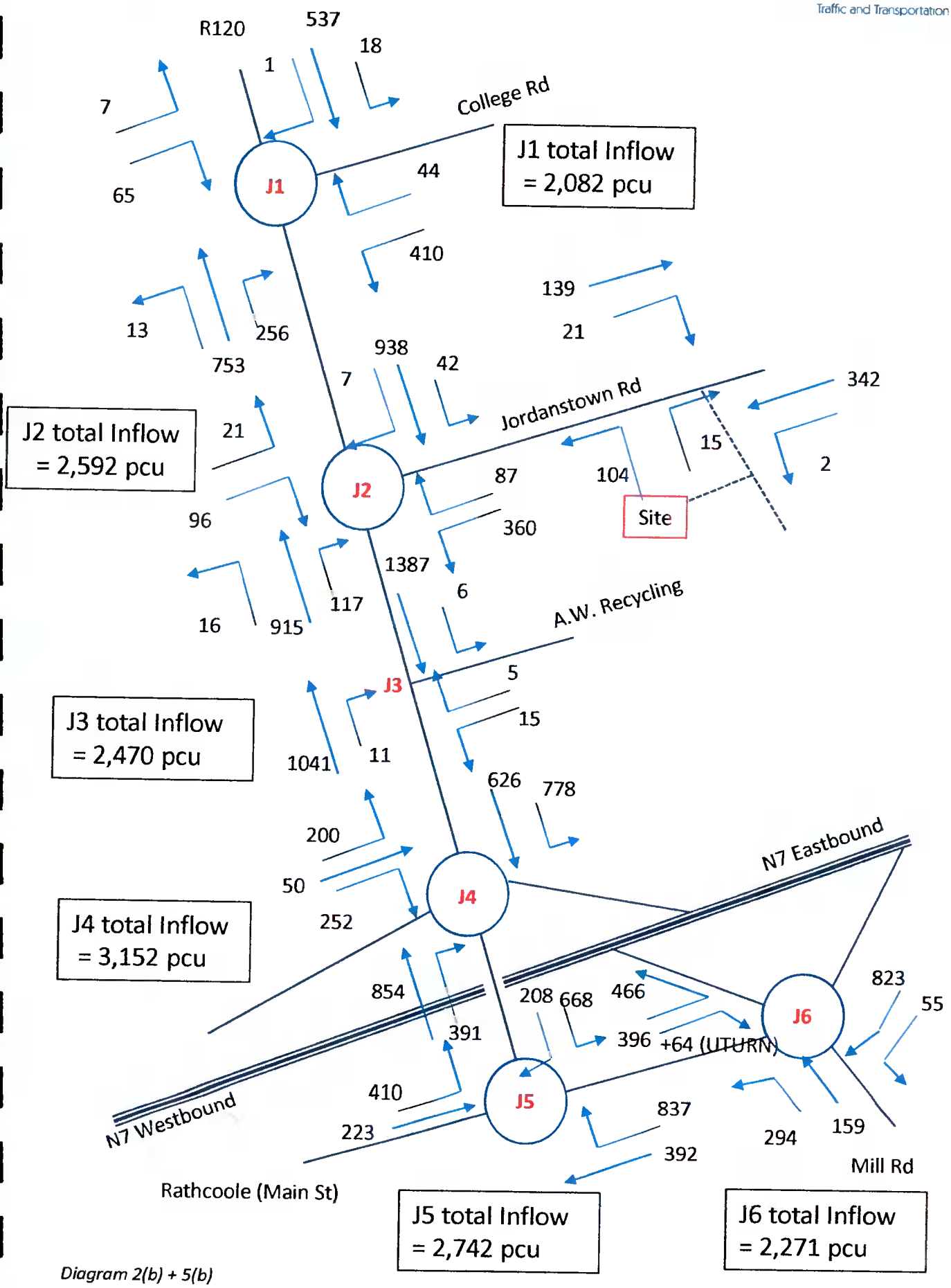


Diagram 2(b) + 5(b)
flows in pcu/hr

Diagram 8(b) : 2028 Opening Year+5 Weekday PM Peak Hour 16.00-17.00 - Do Something

Stephen Reid Consulting
Traffic and Transportation

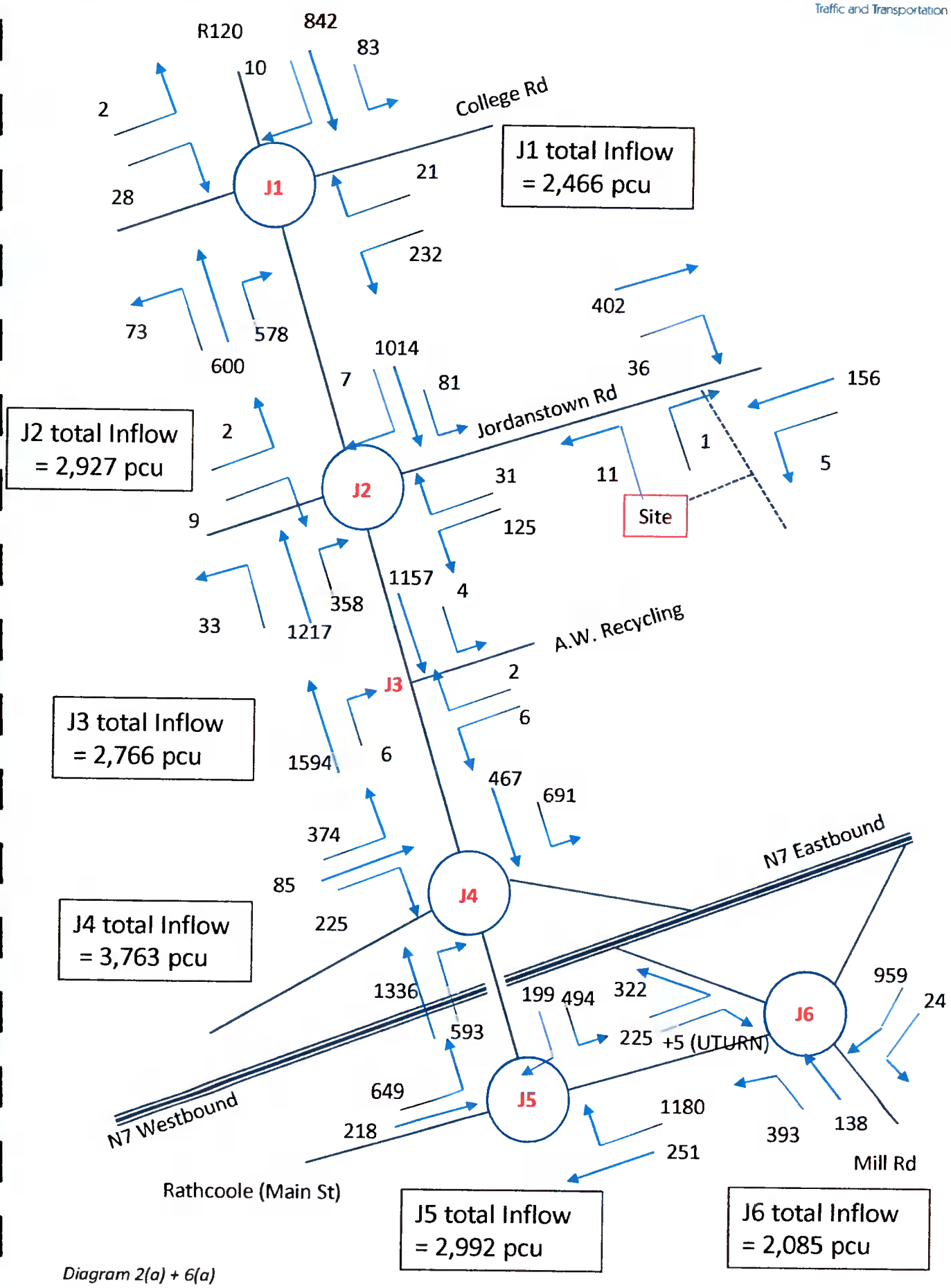


Diagram 2(a) + 6(a)
flows in pcu/hr

Diagram 9(a) : 2038 Opening Year+15 Weekday AM Peak Hour 08.00-09.00 – Do Something

Stephen Reid Consulting
Traffic and Transportation

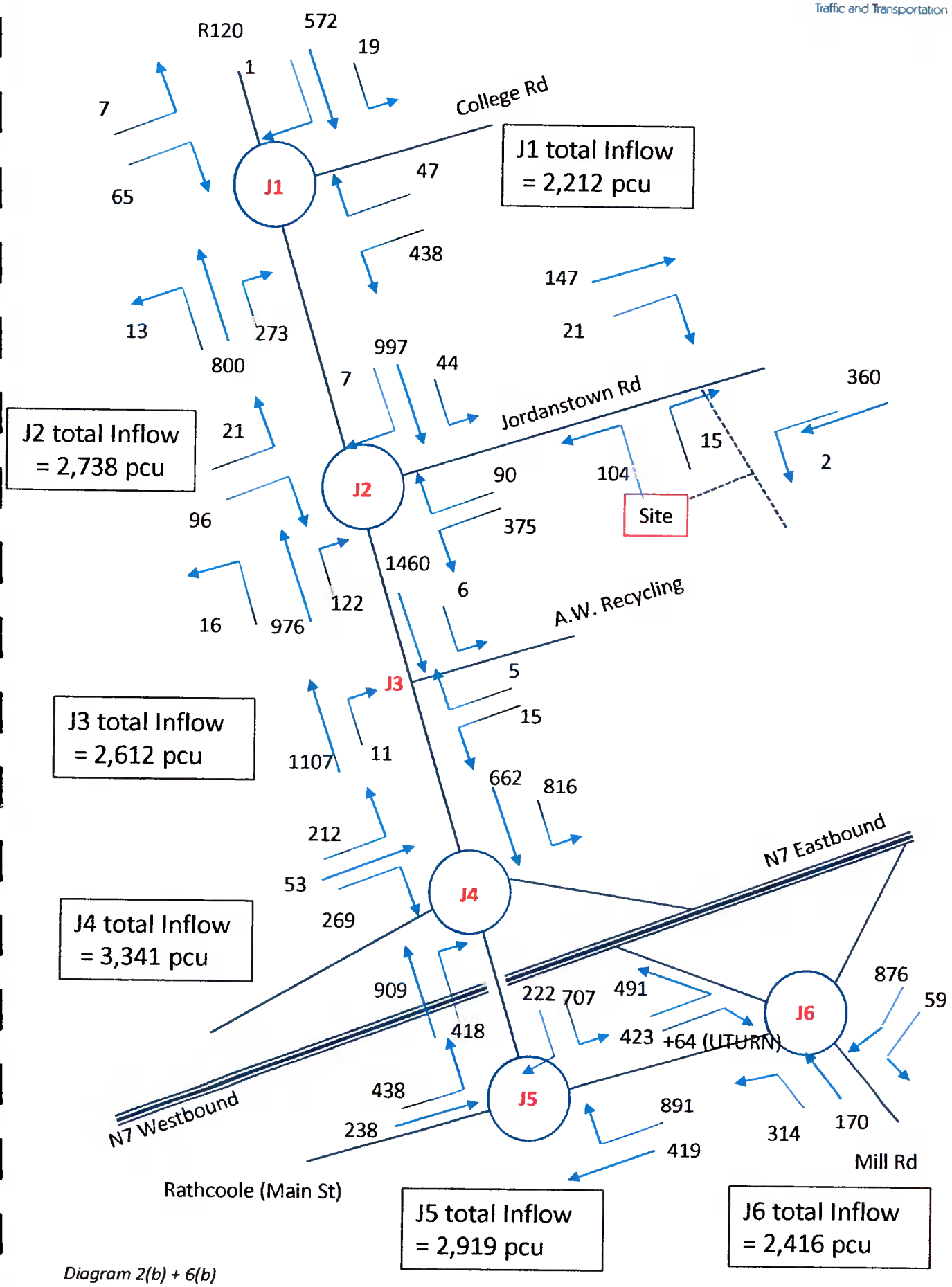


Diagram 2(b) + 6(b)
flows in pcu/hr

Diagram 9(b) : 2038 Opening Year+15 Weekday PM Peak Hour 16.00-17.00 - Do Something

Calculation Reference: AUDIT-758001-180704-0720

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : F - WAREHOUSING (COMMERCIAL)
VEHICLES

Selected regions and areas:

14	**LEINSTER**		
	CC	CARLOW	1 days
	LU	LOUTH	1 days
15	**GREATER DUBLIN**		
	DL	DUBLIN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 3950 to 10500 (units: sqm)
Range Selected by User: 3760 to 10500 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 25/05/16

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Wednesday	1 days
Thursday	1 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town	2
Free Standing (PPS6 Out of Town)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	2
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

B2	1 days
B8	2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
15,001 to 20,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	2 days
50,001 to 75,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	1 days
2.1 to 2.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	3 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	3 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 **CC-02-F-01** **HYDRAULIC CYCLINDERS** **CARLOW**
O'BRIEN ROAD

CARLOW
Edge of Town
Industrial Zone
Total Gross floor area: 10500 sqm
Survey date: WEDNESDAY *25/05/16* *Survey Type: MANUAL*

2 **DL-02-F-02** **DISTRIBUTION CEN** **DUBLIN**
TURVEY AVENUE
DONABATE
DUBLIN
Free Standing (PPS6 Out of Town)
Industrial Zone
Total Gross floor area: 3950 sqm
Survey date: THURSDAY *29/09/11* *Survey Type: MANUAL*

3 **LU-02-F-01** **PACKAGING COMPANY** **LOUTH**
MATTHEWS LANE
LAGAVOOREN
DROGHEDA
Edge of Town
No Sub Category
Total Gross floor area: 5350 sqm
Survey date: FRIDAY *19/06/15* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	**3**	**6600**	**0.662**	3	6600	0.045	**3**	**6600**	**0.707**
08:00 - 09:00	3	6600	0.177	3	6600	0.051	3	6600	0.228
09:00 - 10:00	3	6600	0.091	3	6600	0.071	3	6600	0.162
10:00 - 11:00	3	6600	0.071	3	6600	0.091	3	6600	0.162
11:00 - 12:00	3	6600	0.066	3	6600	0.076	3	6600	0.142
12:00 - 13:00	3	6600	0.066	3	6600	0.126	3	6600	0.192
13:00 - 14:00	3	6600	0.197	3	6600	0.136	3	6600	0.333
14:00 - 15:00	3	6600	0.207	3	6600	0.136	3	6600	0.343
15:00 - 16:00	3	6600	0.106	3	6600	0.152	3	6600	0.258
16:00 - 17:00	3	6600	0.101	**3**	**6600**	**0.520**	3	6600	0.621
17:00 - 18:00	3	6600	0.020	3	6600	0.116	3	6600	0.136
18:00 - 19:00	3	6600	0.035	3	6600	0.232	3	6600	0.267
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.799			1.752			3.551

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	6600	0.020	3	6600	0.015	3	6600	0.035
08:00 - 09:00	3	6600	0.020	3	6600	0.020	3	6600	0.040
09:00 - 10:00	3	6600	0.020	3	6600	0.005	3	6600	0.025
10:00 - 11:00	3	6600	0.015	**3**	**6600**	**0.025**	3	6600	0.040
11:00 - 12:00	3	6600	0.010	3	6600	0.020	3	6600	0.030
12:00 - 13:00	3	6600	0.015	3	6600	0.015	3	6600	0.030
13:00 - 14:00	3	6600	0.005	3	6600	0.005	3	6600	0.010
14:00 - 15:00	**3**	**6600**	**0.035**	3	6600	0.015	**3**	**6600**	**0.050**
15:00 - 16:00	3	6600	0.005	3	6600	0.015	3	6600	0.020
16:00 - 17:00	3	6600	0.015	3	6600	0.025	3	6600	0.040
17:00 - 18:00	3	6600	0.005	3	6600	0.010	3	6600	0.015
18:00 - 19:00	3	6600	0.005	3	6600	0.000	3	6600	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.170			0.170			0.340

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	**3**	**6600**	**0.051**	3	6600	0.005	**3**	**6600**	**0.056**
08:00 - 09:00	3	6600	0.005	3	6600	0.000	3	6600	0.005
09:00 - 10:00	3	6600	0.000	3	6600	0.000	3	6600	0.000
10:00 - 11:00	3	6600	0.000	3	6600	0.000	3	6600	0.000
11:00 - 12:00	3	6600	0.000	3	6600	0.000	3	6600	0.000
12:00 - 13:00	3	6600	0.000	3	6600	0.000	3	6600	0.000
13:00 - 14:00	3	6600	0.005	3	6600	0.000	3	6600	0.005
14:00 - 15:00	3	6600	0.005	3	6600	0.000	3	6600	0.005
15:00 - 16:00	3	6600	0.000	3	6600	0.005	3	6600	0.005
16:00 - 17:00	3	6600	0.000	3	6600	0.015	3	6600	0.015
17:00 - 18:00	3	6600	0.005	3	6600	0.005	3	6600	0.010
18:00 - 19:00	3	6600	0.000	**3**	**6600**	**0.030**	3	6600	0.030
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.071			0.060			0.131

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*